

## CLAIMS

1. A method of preparing a design file or drawing file for a project, each design file or drawing file including a plurality of building component data elements, each representing a specific building component, each unique building component having a unique building component identifier, the method comprising:

(a) selecting one or more building component data elements for the design file or drawing file, each building component data element comprising physical attributes of the data element; and

(b) storing the unique building component identifier of each selected building component data element in a project database.

2. The method of claim 1 wherein each building component data element represents a vendor-specific building component, the project database thereby containing the contents of the building components in the project identified by vendor.

3. The method of claim 2 wherein step (a) further comprises selecting the one or more building component data elements for the design file or drawing file from a library of vendor-specific building component data elements.

4. The method of claim 2 further comprising:

(d) maintaining a component database of vendor-specific building components, each building component including one or more non-physical attributes of the building component.

5. The method of claim 1 wherein the unique building component identifier is stored in a comment field of the building component data element.

6. The method of claim 5 wherein each building component data element is a cell file and the unique building component identifier is stored in a comment field of the cell file.

7. The method of claim 1 wherein each building component data element is defined by a drag and drop component.

8. The method of claim 1 wherein the unique building component identifier of each selected building component data element is stored in a project database that is separate from the design file or drawing file.

9. A method of identifying a vendor-specific building component data elements by vendor, the method comprising:

(a) assigning a unique building component identification number (UCID) to a vendor-specific building component; and

(b) storing the UCID in a comment field of a building component data element, thereby providing any design or drawing file that uses the building component data element with sufficient information to identify building components in the design or drawing file on a vendor-specific level.

10. A method of determining the contents of a design file or drawing file on a vendor-specific basis, the design file or drawing file including a plurality of building component data elements, at least some of the building component data elements having a vendor-specific unique building component identification number (UCID) stored in a comment field of the building component data element, the method comprising:

(a) parsing data of the building component data elements to obtain the vendor-specific UCID's from the comment fields; and

(b) creating an inventory of the contents of the design file or drawing file from any UCID's located in the comment fields.

11. The method of claim 10 further comprising:

(c) maintaining a project database that contains the inventory of the contents of the design file or drawing file.

12. The method of claim 11 wherein steps (a) and (b) are performed subsequent to the initial creation of the design file or drawing file, the method further comprising:

(d) updating the project database with the current inventory of the contents of the design file or drawing file.

13. A computer-implemented method of creating projects that comply with building codes of a geographic location of the project, the building codes of a plurality of geographic locations being stored in a database of rules, each project including a plurality of building components, at least some of the building components being stored in a library of building components and having building code-related data associated therewith, the method comprising:

(a) maintaining a project database that contains:

(i) the contents of the building components in a design file or drawing file of the project;

(ii) a geographic identifier that represents the geographic location of the project represented by the design file or drawing file;

(b) using the geographic identifier, the database of rules for the geographic location, and the building code-related data to identify which building components in the library comply with the building code for the geographic location of the project; and

(c) creating a library subset of selectable building components from the identified building components, wherein a user's selection of building components for the design file or drawing file from the library is limited to the library subset.

14. The method of claim 13 wherein the geographic identifier is a zip code.

15. A computer-implemented method of checking projects for compliance with building codes of a plurality of different geographic locations, the building codes of the geographic locations being stored in a database of rules, each project including a plurality of building components, at least some of the building components being stored in a library of building components and having building code-related data associated therewith, the method comprising:

(a) maintaining a project database that includes the contents of the building components in a design file or drawing file of the project;

(b) assigning a geographic identifier that represents the geographic location of the project represented by the design file or drawing file; and

(c) using the geographic identifier, the database of rules for the geographic location, and the building code-related data to check whether building components that are in the project database comply with the building code for the geographic location of the project.

16. The method of claim 15 further comprising:

(d) identifying any building components in the project database that do not comply with the building code for the geographic location.

17. An apparatus for creating projects that comply with building codes of a geographic location of the project, each project including a plurality of building components, at least some of the building components being stored in a library of building components and having building code-related data associated therewith, the apparatus comprising:

(a) a project database that contains:

(i) the contents of the building components in a design file or drawing file of the project;

(ii) a geographic identifier that represents the geographic location of the project represented by the design file or drawing file;

(b) a rule engine including a database of rules based upon building codes of a plurality of different geographic locations; and

(c) a comparator that uses the rule engine and the building code-related data in the database of building components to create a library subset of selectable building components from the identified building components, wherein a user's selection of building components for the design file or drawing file from the library is limited to the library subset.

18. The apparatus of claim 17 wherein the geographic identifier is a zip code.

19. A method of searching for a building component in a database of building components, each building component being represented by (i) a unique building component identifier, and (ii) characteristic identification number formed by a string of numbers, each digit or group of digits in the string of numbers representing one characteristic of the building component and having one or more values related to a description of the characteristic, the method comprising:

(b) the search engine using the unique building component identifier to locate the corresponding characteristic identification number of the building component; and

(c) the search engine using the characteristic identification number to identify other building components that have characteristic identification numbers that match or closely match the entered characteristic descriptions.

20. A method of encoding building components with unique identification numbers, each building component being associated with a specific vendor, the method comprising:

(a) assigning an arbitrary vendor identification number to each of vendor of building components;

(b) assigning an arbitrary generic building component identification number to each physically unique building component; and

(c) algorithmically combining the arbitrary vendor identification number and the arbitrary generic building component identification number to obtain a unique building component identification number for each building component.

21. The method of claim 20 wherein the algorithmic combination is a concatenation of the vendor identification number and the generic component identification number.

22. The method of claim 20 wherein the algorithmic combination is a concatenation of a hexadecimal equivalent of the vendor identification number and a hexadecimal equivalent of the generic component identification number, with additional hexadecimal checksum digits, thereby creating an encoded version of a unique building component identification number for each building component.